



Annual Review 1998



London Transport
Buses

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Foreword

I am pleased to present our third annual review dealing with London's bus priority initiatives and progress to date and I urge the Capital's leaders charged with promulgating policies and those who can exert influence, to get buses a better deal on our congested roads.

London's buses now account for one third of all bus journeys made in England. Over the last ten years patronage has increased, contrasting with heavy declines in passenger numbers in deregulated areas outside the capital.

London's buses are dogged by increased traffic, lower vehicle speeds and illegal parking by cars, vans and lorries. Bus reliability suffers accordingly. The bane of passengers' lives is buses bunching and consequent long gaps in service. The most significant remedies to these problems are more dedicated bus priority measures and continuous effective enforcement. These measures are relatively inexpensive, can be implemented in a modest timescale, and yet are capable of affording a faster and better quality service to our passengers.

Key partners working with LT Buses to make buses more attractive in a hostile traffic

environment are the Traffic Director for London - implementation of the Priority Red Routes (RR), the 33 London Boroughs - London Bus Priority Network (LBPB) and traffic enforcement and the Police - enforcement.

The task of actually designing, approving, implementing and enforcing schemes requires a determined partnership between all parties as collectively we work towards London's new Government for the millennium.

LT Buses is closely involved in developing these initiatives and monitoring their momentum in order to build on the significant progress that has been made over the past year.

This includes the implementation of many new schemes to improve the LBPB and RR, continued expansion of the Bus Priority at Traffic Signals system and, following

exhaustive testing, greater use of bus camera enforcement measures.

As part of our pledge to work together with boroughs on improving the quality of bus services, LT Buses is developing 'Quality Commitments' - a programme to re-invest savings achieved through increased bus priorities in service improvements.

The highway and traffic infrastructure essential for higher quality bus services is now taking shape, and LT Buses is implementing plans to upgrade London's bus services - with new vehicles providing easier access, improved information, lower emissions, and higher levels of service overall. With all concerned working in partnership, LT Buses believes a major improvement to the quality and image of buses in London is achievable. We remain committed to playing our part.



Clive Hodson
Managing Director, London Transport Buses

Policy changes giving the bus priority

Recent policy changes contained in proposals for a Greater London Authority (GLA) and Transport for London (TfL), plus the Government's White Paper 'A New Deal for Transport: Better for Everyone', and the new London Traffic Management and Parking Guidance provide a very positive change of emphasis with regard to the increased provision for buses.

A number of key points underpin the need for bus priority:

- > Every day, nearly four million people travel by bus in London
- > Buses are efficient 'people movers' – taking up significantly less road space, using less energy and emitting less pollution per passenger mile than the motor car
- > Many people do not have access to a car – buses are available to almost everyone
- > Buses provide essential links from suburb to town, often where there is no rail alternative
- > A delay to a bus on its first journey can lead to delays later on.

Traffic Management and Parking Guidance

Revised Traffic Management and Parking Guidance was issued by the Government Office for London in February 1998. Replacing the Guidance issued in August 1992, it provides a new framework for traffic management and parking implementation and is directed towards London local authorities, the Traffic Director for London and the Highways Agency. One of its core principles is that the management of traffic and road space should be based on the movement of people and goods rather than vehicles.

Traffic Management Guidance

Following significant changes to the aims of the Red Route network, the Traffic Director has been asked to review work yet to be implemented. This could result in modifications that will increase bus priority.

A summary of the revised aims (February 1998); which will benefit buses

- > To facilitate the movement of people and goods
- > To support reduced car commuting, especially into or across inner and central London, and to assist measures to reduce local traffic
- > To provide priority for buses so as to achieve their efficient movement.

Giving a huge boost to bus priority has been the key to assessing the movement of people rather than vehicles



Policy changes giving the bus priority continued

The new guidance provides the opportunity to obtain further bus priority and traffic management measures to assist buses. The new Red Route aims also apply to the designated road network, including those parts of the LBPN on designated roads. The LBPN objectives are also being reviewed in the light of the new guidance. Local authorities are urged by the Government Office for London (GOL) to concentrate LBPN measures on completing specific bus route corridors to assist bus operations and passengers.

Other issues which have been given emphasis in the guidance include:

- > Effective enforcement - local authorities should give priority to removing vehicles hampering buses
- > The community benefit resulting from bus priority means some disbenefits to frontager businesses

- > The need to facilitate interchange between modes
- > The application of intensified bus priorities which would result in delays to other traffic has been highlighted as an area where innovation and experiment would be appropriate, subject to resources.

Parking Guidance

The importance of managing static vehicles is recognised within the guidance along with their effects on efficient bus movement. Parking controls on strategic roads and the LBPN is given a high priority and it is recognised that these controls may be used as a traffic restraint mechanism, although it has been suggested that they have yet to be exploited to the full by the boroughs.

Parking strategies expected from each local authority include:

- > Ensuring effective on-street enforcement, particularly on bus routes

- > Introducing, strengthening or extending Controlled Parking Zones
- > Ensuring that parking space is effectively managed by time and price
- > Meeting traffic and transport objectives
- > Providing convenient coach parking and pick-up points at entertainment and other visitor locations
- > Reviewing the cost of public parking so that it restrains non-essential journeys by car and reduces the overall demand for parking
- > Developing a comprehensive approach to the management of on-street and off-street parking.

The Secretary of State expects that there should be a continuous reduction in on-street and off-street commuter parking throughout London and that charges and controls should be used to encourage a shift from the use of the private car.

Key documents produced this year confirm the Government's commitment to improving the role of the bus.



Improved facilities, such as the provision of Countdown, encourage the use of buses in London



Revisions to the Network Plan

Following the Traffic Management and Parking Guidance, the Secretary of State revised performance indicators for the Red Route Network. The revised network plan contains key indicators which should assist buses by achieving, as far as practical:

- > At least a 10% reduction in general traffic journey time
- > At least a 10% reduction in bus journey time
- > At least a 40% improvement in reliability of bus journey times.

Greater London Authority and Transport for London White paper

Working under the powers granted to the Mayor, it is expected that Transport for London will be responsible for London's bus services, setting quality, safety and cost objectives, and planning the detailed pattern of the service.

A key element of the GLA's integrated transport strategy will

be initiatives such as the LBPV and parking strategies. The boroughs will frame local implementation plans to give effect to these strategies. Their plans will be subject to TfL approval, as will any departures from the agreed implementation plan. If a borough fails to implement its local plan, the GLA will have the reserve powers to direct or undertake the necessary work.

A New Deal for Transport: Better for Everyone

In July, the Government issued its White Paper on the future of transport 'A New Deal for Transport: Better for Everyone'. Included in the New Deal for the public transport passenger are:

- > More and better buses
- > Better interchange and better connections
- > Enhanced networks with simplified fares
- > More reliable buses through priority measures and reduced congestion

- > Improved personal security when travelling
- > Easy-access public transport.

Reference is made to the major transport role to be given to the new GLA, headed by the directly-elected Mayor. Powers to introduce road-user charging and a levy on workplace parking spaces are proposed and would provide important tools for tackling congestion and air pollution, especially in central London. Legislation will be promoted in these two areas with the proceeds used to benefit the local area and public transport where the charges apply.

London is featured as an illustration of what integrated transport can mean in practice, including as examples the LBPV, Countdown, Bus Priority at Traffic Signals and the encouragement given with the new Traffic Management and Parking Guidance.

London Bus Priority Network and Red Routes

During 1997/98, a further 64 bus lanes and 793 bus stop clearways were added to the network, confirming the Highway Authorities' and the Traffic Director's commitment to bus priority measures.

In December 1997, the Government confirmed its commitment to the LBPN by raising the funding allocated to £11 million for 1998/99, an increase of over 20%.

Alongside work on the LBPN, LT Buses has continued to work with the Traffic Director, and a number of notable schemes have been implemented on the Red Route Network. A review of the Network, with the aim of securing further bus priority measures is currently taking place and regular meetings with the Highways Agency are now being held to secure bus priority measures within schemes it is promoting on the trunk road network.

However, there is still a long way to go. Buses continue to be held up by congestion at traffic 'hotspots' where conventional bus priority has not been practicable within previous objectives. It is hoped that revised objectives and changing Government policies

will help overcome this in the coming years.

Central sector

The sector consists of the boroughs of Camden, Islington, the City of Westminster and the Corporation of London, as well as Lambeth and part of Southwark. During 1997/98 just under £1.6m was spent on bus priority measures, including the following highlights:

- > Westminster - reversal of the one-way working in Jermyn Street. Bus stop clearways have also been introduced
- > City - new bus lanes in the St Paul's Churchyard/Queen Victoria Street area, and a bus by-pass in Aldgate checkpoint
- > Camden and Islington - new bus lanes in the corridor from Fortress Road to Junction Road and Highgate Road
- > Islington - bus stop and boarder measures in the Blackstock Road/Highbury Barn/Highbury Grove corridor
- > Lambeth - southbound bus lane in Lambeth Palace Road.

Additional activities included design work for measures in Baker Street/Orchard Street/Gloucester Place/Portman Street and Harrow Road and a pre-signal in Gloucester Place at the approach to Marylebone Road. The Fleet Street bus lane is planned for implementation in late 1998.

In Camden, public consultation has finished on proposals for a bus lane and other measures in the New Oxford Street - Holborn corridor for implementation in 1998/99. In addition, public consultation on the proposals for the Charing Cross Road - Tottenham Court Road/Gower Street corridor, held up for the World Squares study, is now being progressed.

In Southwark, work continues on the Camberwell Road pre-signals and is due to start on schemes in Blackfriars Road/Borough High Street/Newington Causeway. The contra-flow bus lane scheme

Tyburn Way, Marble Arch, buses use 'intergreens' to reduce delays to services



proposed for Tooley Street by LT Buses is not progressing because of the reduction in residents' parking and bus flow changes when the Jubilee line extension is opened. LT Buses believes that commuter coaches would support its justification.

Studies at Waterloo Station include improved bus circulation and standing arrangements following the opening of the Jubilee line extension.

Red Routes

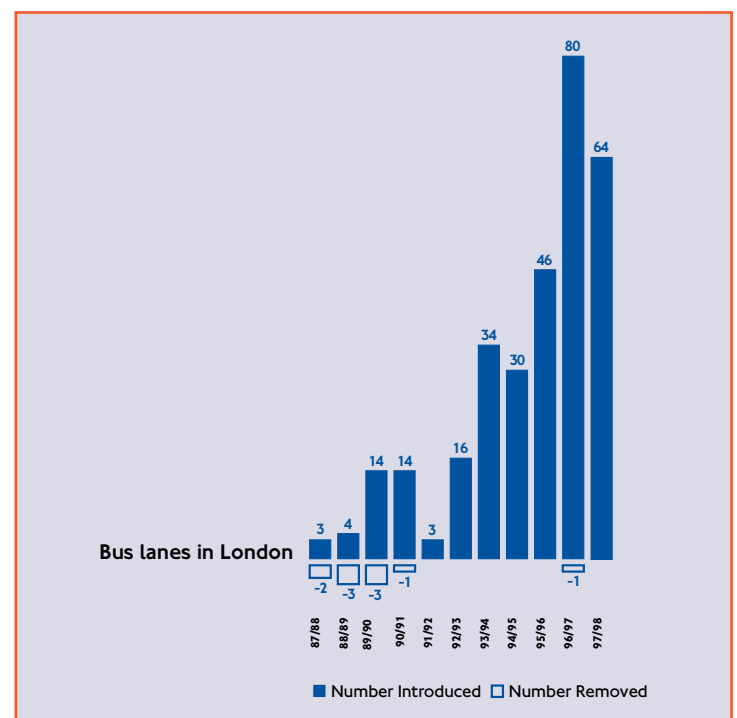
Measures were introduced on the A4 Knightsbridge, A41 Finchley Road and on the A5 Edgware Road (St John's Wood Road to Marble Arch) while measures in Camden Road/ Camden High Street and Hampstead Road are being implemented. In the City, bus lanes have been introduced southbound in Bishopsgate and northbound on London Bridge.

The Islington High Street/ Liverpool Road southbound bus pre-signal scheme was officially opened by Glenda Jackson, CBE MP, Minister for Transport in London in December 1997, and is providing substantial improvements in bus journey times.

Tyburn Way, Marble Arch

The experiment has shown journey times for buses using Tyburn Way considerably reduced as they emerge on a 'give way'. This gives a degree of extra capacity which has allowed a bus lane to be introduced in Edgware Road southbound.

The Highways Agency is constructing a major junction improvement at the Angel to provide improved pedestrian facilities. LT Buses has negotiated with the Highways Agency to improve signalling of the City Road contra-flow bus lane approach.



	Number introduced 97/98	Metres introduced 97/98	Total number in London	Total metres in London
Bus Lanes	64	7722	525	126,032

London Bus Priority Network and Red Routes continued

North West sector

This sector covers the boroughs of Barnet, Brent, Ealing, Hammersmith & Fulham, Harrow, Hillingdon, Hounslow and Kensington & Chelsea, together with part of Camden. The LBPV is being implemented on a corridor basis, involving notable cross-boundary working. Just over £2.75m was expended on bus priority schemes during 1997/98, including the following highlights:

- > Further schemes along Uxbridge Road route 207/607 corridor, including new bus gates at Ironbridge and Vine Street, the latter allowing buses to serve the Civic Centre end of Uxbridge High Street in each direction
- > An eastbound bus lane at Kensal Green, with further schemes planned in Wembley, Sudbury and Harlesden Town Centres
- > A bus lane and roundabout signalisation scheme in Northolt Road, Harrow has benefited the route 140 corridor, as has construction of bus lanes and a pre-signal in Station Road, Harrow. Additionally, a new signalled

U-turn bus gate in the central reservation of Uxbridge Road, by Greenford Road has been implemented.

Routes 207/607, 32, and 18 'first generation' bus priority schemes have been chosen as route length corridors for complete implementation in 1998/99. On routes 207 and 607 more advanced bus priority is planned in future years.

The most dramatic measure to help buses in the sector, and probably the whole of London, in terms of its effect on local bus services, is the closure to general car traffic pending strengthening works of Hammersmith Bridge, with buses permitted access one at a time in each direction. LT Buses strongly recommended that these arrangements continue on a permanent basis, but the borough has decided to reopen the bridge from autumn 1999. LT Buses hopes to maintain the benefits gained as far as possible and has commissioned a study to examine the scope for this.

LT Buses has been participating in the Intermediate Mode

study on Uxbridge Road and is taking the lead on three 'Quality Corridor' studies in the sector, covering the route 32, 140 and 285 corridors.

Red Routes

Most sections of Red Route in the sector are high quality trunk roads and opportunities for bus priority are limited. However, buses are benefiting from being permitted to make the direct right turn from Hanger Lane to Uxbridge Road, Ealing. This is the first junction on a trunk road in London at which traffic signal bus priority within the UTC system has been approved. In addition, a new bus lane has been funded by the Traffic Director on the Hanger Lane approach to the gyratory from Alperton.

Following implementation of the bus lane on the southbound M4 Spur Road, by the Highways Agency, further bus priority schemes between Harlington Corner and Nene Road are under consideration; these will greatly assist bus passenger access along the A4 to and from Heathrow.

Eastbound bus gate on Uxbridge Road at the Greenford Road (Ironbridge) junction.



A scheme promoted by the Traffic Director, Haringey and LT Buses with European regional development Fund Support has improved the interchange at Seven Sisters.



North East sector

This sector covers the nine boroughs of Barking and Dagenham, Enfield, Hackney, Haringey, Havering, Newham, Redbridge, Tower Hamlets and Waltham Forest. During 1997/98, £1.8m was spent, including a £100,000 transfer from other sectors. Some of the more notable schemes include:

- > Bus lanes on Barking Road and on Southbury Road between Great Cambridge Road and Baird Road have been implemented along with an innovative bus and HGV lane on Muswell Hill
- > Improved waiting and loading facilities on Crouch End Broadway
- > 100 bus stops in Haringey and Hackney have had red surfacing applied.

A scheme which improves operating conditions for buses along Green Lanes has been introduced by Barking and Dagenham. This involves

improvement to bus stopping facilities, alterations to waiting restrictions, provision of parking bays and bus boarders. Similar facilities in Redbridge are being considered.

Newham Council has agreed to allow buses to continue to operate northbound in East Ham High Street all week. In the longer term, there are proposals for pedestrianisation with bus access in Leytonstone High Street and LT Buses is working with the borough to develop a bus-friendly scheme.

LT Buses and Enfield have managed to incorporate a double-width bus lane into proposals for a new cinema and entertainment complex on Southbury Road, Enfield which will be funded by the developer.

Red Routes

In Tower Hamlets, implementation of Red Route controls along the A11 through

Whitechapel Market has improved operating and stopping conditions for buses. In Newham work is well advanced on a scheme to improve bus priority and facilities at the northern terminal of the Woolwich Ferry. The scheme led to a complete re-design of the terminal, with land being provided by the then London Docklands Development Corporation to give increased queuing space.

In Haringey, a major project designed by the Traffic Director and the borough to improve the interchange between buses and the Underground at Seven Sisters is nearing completion. It has involved moving bus stops closer to the station exit, provision of bus lanes, improved pedestrian facilities, wider footways and Kassel kerbs. The total cost of around £700,000 was funded by the Traffic Director, Haringey and LT Buses with European Regional Development Fund support.

London Bus Priority Network and Red Routes continued

South West sector

This sector comprises the boroughs of Croydon, Kingston, Merton, Richmond, Sutton and Wandsworth. Just over £1.6m was spent on bus priority in 1997/98, including the following highlights:

- > Bus lanes have been implemented in London Road, Mitcham, and Kew Road/The Quadrant in Richmond, as well as an extension to Garratt Lane bus lane in Wandsworth
- > Junction widening has taken place on an approach to the Middleton Road/Bishopsford Road junction to reduce delays to buses caused by turning traffic in Sutton
- > Merton has started a programme to provide red surfaced 24-hour clearways at all bus stops on the LBPN
- > In Wandsworth a bus stop boarder has been implemented in Southcroft Road along with red surfaced clearways along the 220 route.

In Croydon, Tramlink works are still affecting bus services, although the new bus bridge to Park Street has provided some benefit. In Kingston, the Kingston Bridge works are causing some problems,

although it is recognised that the new bus lane on the bridge will provide significant benefits.

The boroughs have also been busy designing and consulting on schemes to be implemented in 1998/99. Kingston are still pursuing the Richmond Road 'bus aspect' pre-signal, which was deferred at the last moment as a result of redesign of the scheme by the Department of the Environment, Transport and the Regions (DETR).

Other initiatives include South and West London Transport Conference (SWELTRAC) and the Green Areas Study. In addition, the sector has taken the lead in an experimental trial of 'Rainline' - a raised rib marking to demarcate the bus lane from the general traffic lane. At the beginning of 1998, consultants were appointed to review existing bus priority measures and to investigate sections of the LBPN which have not previously been studied.

Elsewhere, various traffic-calming schemes have been appraised and commented upon, together with a review

of several development-related issues, such as Wimbledon town centre, Richmond and Clapham Junction stations, and the Battersea Power Station redevelopment.

Red Routes

A number of important schemes have been implemented during the year. LT Buses assisted in refining and agreeing alterations to Morden Bus Station to give kerb-side access to passengers, immediately outside the station entrance. In Lambeth the northbound bus lane on Clapham Common South Side has been successfully implemented while a contraflow bus lane on Clapham Common Northside, in Wandsworth, is also operational. In addition the 'no car' lane in Nine Elms Lane was the first of its kind on London's strategic road network.

South East sector

This sector covers the boroughs of Bromley, Lewisham, Greenwich, Bexley and Southwark. In 1997/98 in the region of £1m was spent on the design and implementation of bus priority measures, including the following highlights:

Buses and cyclists benefit from the 4 metre bus lane in Clapham Common South Side, implemented by the Traffic Director.



Improvements to Friswell Place bus stand in Bexleyheath funded by the London Bus Priority Network.



> A bus lane with pre-signal in Bush Road, Southwark approaching Rotherhithe New Road

> New bus stands in Geddes Place and Friswell Place, Bexley. Further work is ongoing to improve bus stopping locations in Bexleyheath town centre with one-way working as an integral part of these proposals

> Bus lanes in Bromley Road, Shortlands, High Street Penge, and Downham Way, Lewisham.

The corridor between New Cross and Forest Hill (six bus lanes) and the corridor between Surrey Quays and Greenwich (ten bus lanes) have been subject to preliminary evaluation. Encouraging results show bus journey times faster than car speeds by up to six minutes on a Sunday in Romney Road, Greenwich.

Further bus priority schemes are planned in Greenwich in relation to the Millennium celebrations. LT Buses would

like to make progress in Eltham High Street and surveys are planned which should assist LT Buses and the borough in deciding future actions.

In Southwark, Shopping Centres Limited has rejected proposals for a bus link through Surrey Quays shopping centre to serve the new bus and Jubilee line station at Canada Water. Therefore, a right-turn for buses only, which will enable buses to serve the station, is being pursued.

A study has been commissioned to improve bus access to the new Crystal Palace development which has now received planning permission.

Bus routes 180 (Lewisham-Woolwich-Thamesmead East) and 227 (Bromley North station-Crystal Palace) have been chosen as showcase route corridors in the South East. In total, 27 bus lanes have been implemented in the sector over the past three years.

Red Routes

Bus lanes have been implemented on an experimental basis between Catford and the boundary of Bromley as part of the A21 Red Route. Bus lanes along the A21 in Bromley are planned for implementation in October/November 1998 while several bus lanes have been implemented along the South Circular (A205), including London Road, Waldram Park Road and Stanstead Road.

Lewisham Council have begun work to introduce bus lanes on A20 Lee High Road, A20 Amersham Road, A21 Rushey Green and a new contra-flow bus lane through New Cross one-way system. Further bus lanes are being implemented on Academy Road and Well Hall Road, Greenwich.

LT Buses is committed to working with operators and local authorities to plan and implement new quality initiatives



Demonstration initiatives

Quality Commitments

LT Buses is committed to meeting its customers' requirements by providing simple and frequent services, with good access at stops, new vehicles and technology, and reliable and dependable services. In achieving these objectives, LT Buses is looking to formalise its partnership with local authorities.

LT Buses and operators would make a commitment to reinvest any savings accrued from improved journey times or reliability as a result of enhanced bus priority. It is hoped that the Quality Commitments will be an ongoing process, resulting in the following potential improvements:

- > LT Buses could provide high-quality passenger information, letting route contracts with

new low-floor accessible buses, higher frequencies, better penetration, improved shelters, and cleaner exhaust emissions

- > Operators could invest in new vehicles, deliver more reliable services and raise customer care and driving standards
- > Local Authorities could provide intensified levels of bus priority, control parking, improve bus access to town centres, enhance bus standing facilities, introduce Kassel and other kerbs suitable for low-floor buses and follow the Traffic Director's practice of protecting all bus stops with all day clearway controls. Additionally, they could promote travel awareness for their staff, residents and other employees in the borough.

LT Buses is currently developing Quality Commitments with a

dozen boroughs and aims, eventually, to cover the whole of London. The boroughs were asked to define strategic and detailed priorities for bus service improvements. The first agreements are nearing finalisation and will consist of a schedule of aims and principles, a detailed statement of intentions and a broad qualitative balance sheet of each party's actions.

Intermediate Modes

A study looking at nine important traffic corridors in outer London, to see if they were suitable for new forms of transport, was undertaken in 1995/6. Some of the corridors were found to be potentially suitable for intermediate modes – defined as a vehicle between conventional bus and conventional heavy rail

- > Barking and Romford - the objective is to design a

Demonstration initiatives continued

rubber tyre-based rapid transit system giving levels of priority and accessibility enjoyed on light rail systems. One of the key benefits would be the return of bus-based public transport to the town centres in Romford and Barking

> Uxbridge Road - a range of options from advanced conventional bus priority to a fully segregated rail-based mode, with varying degrees of traffic restraint, is being examined. An engineering feasibility study in Acton town centre will be followed by studies in the remaining principal town centres on the corridor.

Cross River Partnership.

The Partnership of London boroughs, London Transport and the South Bank Employers Group, is investigating the potential for public transport improvements between north and south sides of the Thames in

central London. Studies are being carried out for transit link alignments for trams or high quality buses to run from Camden Town via Waterloo to Stockwell and Peckham.

A special low-emission, fully accessible bus service, ECO-BUS is being promoted to link public transport services and river piers with centres of tourist activity and employment.

Quality Corridors

Developed from the study into new ideas for public transport in outer London, these are corridors where current demand levels are insufficient for major capital investment in new modes and so the short-term objective is to enhance existing bus operations.

> Wood Green Area - a feasibility study has shown insufficient demand to operate over the originally proposed

route (Tottenham, Wood Green, Muswell Hill to Highgate). It has therefore been agreed to concentrate efforts on the existing routing of the 144 (Muswell Hill, Wood Green, Edmonton) and proposals for more radical bus priority are being developed

> Edgware Road - the study is progressing well

> Heathrow/Harrow - an initial study is under way to examine problems and options on this corridor. This will revisit existing and proposed bus priority schemes and consider pedestrian access to the corridor, interchange arrangements, service quality, and possible traffic restraint

> Heathrow/Kingston - all operational problem locations and opportunities along the corridor have now been identified by the steering group, and a study to assess opportunities for higher levels

Bus lanes and new low-floor buses are two key quality improvements for bus passengers in London.



of bus priority has begun. The substantial benefits from opening up the Cargo Tunnel at Heathrow Airport are being quantified with a view to making renewed representations to the Civil Aviation Authority and the Home Office.

Total Route Upgrade

LT Buses is looking to develop four or five routes to demonstrate the potential of applying current best practice to bus operations. In partnership with the Highway Authorities, this would bring together modern low-floor accessible vehicles, upgraded bus stop layouts and facilities, a very high level of bus priority, effective enforcement and improved levels of passenger information and operational control.

One of the first is route 43, which is being promoted in

partnership between the Traffic Director, LT Buses and several boroughs. Investigation and early designs have commenced, with works to begin during 1998/99.

Intensified Bus Priority

With changes in transport policy, the way in which bus priority measures are evaluated is changing. It has been recognised that benefits to the community arising from encouraging motorists to switch from car to public transport, walking or cycling - such as reductions in pollution, health improvements, and reductions in noise - cannot easily have a monetary value attached, thereby weakening the argument for relying on purely economic assessments.

It is now time to be more positive in taking road space from the private car and

reallocating it on the basis of people using the road space. The bus user and the pedestrian should both gain significantly from such an approach. Taking bus lanes up to stop lines, establishing segregated 'busways', and stricter regulation of loading and waiting, are all examples of how this could be applied.

Modelling work, co-ordinated by GOL, based on the London Transportation Studies has demonstrated dramatically the possible impacts of introducing a mix of intensified bus priority and traffic restraint. While results of modelling work must be treated with a degree of caution, the potential benefits are so large that the results demand serious consideration. LT Buses is eager to take a leading role in establishing a demonstration project to test these theories.

Enforcement initiatives

The enforcement of traffic regulations is essential if bus services are to achieve improved reliability for the four million passengers who use buses daily.

Camera Enforcement

The Traffic Director is actively expanding bus lane camera enforcement measures which have been part-funded by LT Buses. Two types of camera are used, on-bus cameras and fixed location cameras alongside bus lanes. The Metropolitan Police are co-operating with this project by issuing 'tickets' to offending drivers. By early 1999 150 out of a total of 525 bus lanes will be covered by this project. Subject to sufficient funding, camera enforcement will be introduced across the whole of London.

A second, complementary system has been developed by TCSU using CCTV cameras to provide video evidence of violations under London Local Authorities Legislation. By early 1999 four London boroughs will be part of a pilot scheme using CCTV to enforce bus lanes. In future, if legislation allows, cameras could

be used for waiting and loading restrictions, bus stop clearways and banned turns etc.

The Traffic Director has asked all London Boroughs to remake bus lane Traffic Regulation Orders, to comply with the model order which can be used with automatic enforcement cameras.

Agreement has been reached with the Police for LT Buses to view and control CCTV traffic cameras. This is particularly useful for the 250 cameras in central and inner London, in the event of emergencies, marches and a range of other incidents.

Traffic Warden/Borough Parking Attendant Enforcement

The Metropolitan Police reduced the number of wardens from around 1400 to 1180, reflecting their more limited role. Borough parking attendants remain at around 1,300.

Enforcement Initiatives to Assist Buses

LT Buses is collaborating in a number of initiatives:

- > Following a successful two-week police/borough purge of bus lane offenders, the Minister launched a much longer enforcement campaign
- > LT Buses, in conjunction with bus operators, has identified locations where enforcement would assist bus movement. Boroughs have committed themselves to improve enforcement on the LBP.
- > The Traffic Director is placing 24hr no-stopping controls at all bus stops and boroughs are placing bus stop clearways on the LBP.
- > Free bus travel has been offered to attendants in boroughs to encourage the enforcement of restrictions on bus routes. Half have taken up the offer to date.



Enforcement cameras are key to reducing violations of bus lane regulations, so improving bus service reliability.

Comprehensive field trials of new methods for bus priority at traffic signals have shown significant savings in overall journey times



Bus Priority at Signals (Selective Vehicle Detection)

Across London, around 400 signalled junctions are now fitted with bus priority. Signals in the Twickenham, Uxbridge Road, Kennington and Bromley Urban Traffic Controlled (UTC) areas are the most recent to be equipped. There are 1,200 signal junctions to go.

In 1997/98 equipment was purchased for installation at a further 150 sites across London after field trials showed significant savings for buses in Camden and along the Edgware Road. More recent results using Bus SCOOT, a signal optimising system, in Kennington and in Bromley town centre indicate average savings of three to five seconds/bus/link which equates to 15% to 20% savings in delay.

Given such results, each scheme pays for itself in ten months using cost/benefit analysis. While this is worthwhile, the key benefit remains the improved reliability and predictability of journey times for passengers.

The 150 additional signal junctions are mainly in inner and central London and include the areas of Baker Street/Gloucester Place, Tottenham High Road, Surrey Quays, Walworth Road, Denmark Hill, Mitcham Town Centre and Kilburn High Road. These areas focus on groups of linked junctions operating under UTC, together with some non-linked signals.

A beacon-based system, connected to LT Buses Fleet-wide Automatic Vehicle Location equipment, is being trialled along Uxbridge Road. If successful and viable, the transponders currently used to indicate the presence of buses will be gradually replaced.

Research trials on MOVA, a computer program used at independent signals, has progressed and the Highways Agency is now installing bus priority within MOVA at some trunk road junctions. This gives more scope to the range and number of junctions which can give bus priority.

European Union Project: 'INCOME'

LT Buses is one of the participants in the 'INCOME' (INtegration of traffic COntrol with other MEasures) European Commission project. The aim is to integrate various elements of traffic and transport management systems to ensure London's highway network becomes more efficient in carrying people.

The results of the field trials

being undertaken in London – Uxbridge Road and Twickenham Town Centre – will be used to develop techniques and policies that will serve as European guidelines.

The systems selected for field trials are:

- > SPRINT (Selective PRIority in Networks Technique) - Active bus priority within fixed-time UTC systems
- > Bus SCOOT - Active bus priority within traffic responsive SCOOT UTC systems
- > Integration of Bus SCOOT and Automatic Vehicle Location (AVL)
- > Traffic metering (gating) integrated with physical bus priority (e.g. bus lanes) to facilitate queue relocation
- > Variable Message Signs (VMS) integrated with traffic metering.

Savings from Bus SCOOT

Location	Savings (secs/bus/link)
Edgware Road	3
Camden Town	5
Twickenham	2-5
Uxbridge Road	4
Kennington	3-5
Bromley	3-5

Traffic calming and Roadworks

Traffic Calming on Bus Routes

In 1993 and 1996, LT Buses issued guidelines on 'Traffic Calming for Buses', which reminded highway authorities that most measures have a more severe effect on buses - and their drivers and passengers - than they do on cars.

Whilst these guidelines were reasonably effective, full consultation was not always carried out and unsuitable schemes continued to be installed on some bus routes. There were also problems with the cumulative effects of several traffic calming systems on individual bus routes. Growth in the use of low-floor buses has added to the increasing awareness of the problems that can be caused by traffic calming. Indeed, inappropriate measures are starting to be a barrier to the extension of low-floor accessible services.

The guidelines have been revised by a working group of LT Buses and bus operators, enabling a wider range of views to be expressed. The guidelines are intended to give a clearer understanding of bus operational problems in traffic calmed areas, and to enable LT Buses and operators to give consistent responses to traffic calming proposals. LT Buses has also consulted Highway Authorities to ensure guidelines are as helpful as possible while setting standards necessary for effective bus operation.

Roadworks

Roadworks can cause significant delays to buses whether due to an emergency or planned. Emergencies are unpredictable but the needs of bus passengers should be taken into account, keeping any diversions as short as possible. Delays caused by planned works can often be minimised by incorporating measures to protect bus services.

These include carrying out roadworks when traffic flows are lower than normal, such as during school holidays, weekends and off-peak periods.

LT Buses has sought to highlight the impact that roadworks have on buses and passengers in a report to boroughs and utilities which urges reduced bus delays and special provision for buses when medium to longer-term works are proposed.

A leaflet reflecting these points is being produced for all those connected with roadworks. In addition, through commenting on code of practice revisions and other communications, LT Buses continues to press for improved conditions for buses.

LT Buses is now in much closer contact with Highway Authorities and Statutory Undertakings and attends roadwork liaison meetings on a regular basis.



Effective 'bus friendly' traffic calming.



Roadworks can have a serious impact on bus services.

Developments

Town Centres

LT Buses seeks to optimise access arrangements to town centres for bus passengers and to achieve direct rather than convoluted routings. In essence, bus passengers need convenient and attractive stops in town centres with minimum journey times. If town centre visitors are to use cars less, then access by bus must be made at least as easy as by car.

In the past year, considerable effort has gone into defending established bus/pedestrian shared space schemes threatened by local authority proposals to move buses from core streets to peripheral routes, as illustrated by the following examples:

- > East Ham - Newham Council imposed a six-month experiment excluding buses on Saturdays only from High Street North. The Council has reconsidered the scheme and buses are now back in the High Street
- > Rye Lane, Peckham - Plans to control access to southern Rye Lane using automatic rising bollards should be implemented next year. Several months of negotiation with Southwark over plans for northern Rye Lane have resulted in a compromise which retains about half of the buses currently using this section of road
- > Watford - a limited number of buses have been permitted to return to the formerly all-

pedestrian High Street on an experimental basis. It is hoped that LT Buses' services will be involved later in this scheme.

Another key issue is the changing size and layout of town centres:

- > The Romford Brewery site development will shift the centre of gravity of the town centre towards the west. Bus passengers will be saved several minutes' walk following negotiations to secure a rationalisation of the pedestrian route from the station to the new hypermarket
- > Staines is doubling in size as a retail centre, with large developments north of the High Street. At the same time the gyratory road system is

Successful bus/pedestrian environment – East Ham High Street Newham.



Improved bus facilities in King William Walk, Greenwich, could form part of the Millennium Project.



being returned to two-way operation. LT Buses is resisting a suggestion that the High Street should be pedestrianised - which would mean shopping and leisure moving north, while bus stops move south - and are also providing evidence for retaining a central bus access.

Millennium Project Works

The northern part of the borough of Greenwich is undergoing massive development and transport changes. The extension of the Docklands Light Railway to Greenwich/Lewisham and the extended Jubilee line are both due for completion in 1999; the Greenwich Peninsula is subject to a large land development programme; and

the Millennium Dome will be open by the year 2000. To support the declared policy that access to the Millennium Dome will be by public transport, new high quality bus services are planned serving Charlton station, the Dome and Greenwich town centre.

Bus priority measures associated with the new services include:

- > Rail-bus interchange at Charlton Station including a bus turnaround with segregated, signal-controlled bus-only access road link
- > The potential for a purpose-built, segregated busway along part of the route
- > Signal priority at junctions along the route
- > Protected bus stops and

controlled parking zones to stop external traffic.

LT Buses is participating in the planning of the developments in this area with two objectives. Firstly, to safeguard the position of all bus services and secondly to ensure that new bus services have optimal on-street operating conditions using bus priority measures.

The key measures being discussed are with-flow bus lanes in Greenwich High Road (assisting services from Greenwich station) and in Blackwall Lane possibly with pre-signals to ease southbound buses turning right from the bus lane into Trafalgar Road.

Project overview

World Squares for All

This major project aims to develop schemes to improve public access to, and enjoyment of, Parliament Square, Trafalgar Square and the wider Whitehall conservation area, and Westminster World Heritage Site, while preserving and enhancing their heritage settings.

As part of the terms of reference, all proposals should 'improve the reliability and reduce journey times for LT Buses' services'. The project is co-ordinated by Westminster City Council with funding from many sources. Parliament Square and Trafalgar Square are very heavily used by all modes - recent counts show 75,000 pedestrians, 51,000 cars, 34,000 taxis and 4,000 buses carrying over 80,000 passengers in a 7am to 7pm day. These figures show that although there are 20 times more cars and taxis than buses, they carry about the

same number of people. This emphasises the 'people moving' value of buses.

In the past year, the refinement of options continued with public consultation and an exhibition in November 1997. Two main strategies were consulted upon, one of which has more road closures and environmental improvements than the other. LT Buses was closely involved in the formulation and testing of the options, both of which include a high degree of bus priority.

A Masterplan has now been

finalised based on many of the urban design aspects of the more radical option while retaining the traffic elements of the other strategy. A key issue is the need to ensure that all changes to Trafalgar Square are implemented in a single phase.

Discussions on how these changes will be funded will continue with among others, The Heritage Lottery Fund.

LT Buses will continue its close involvement in the project and further representations to the Government will be made for measures to reduce car traffic in London.

Improvements in Parliament Square as part of the World Squares project will help to reduce traffic, maintain bus flows and significantly improve the pedestrian environment.



Bus and pedestrian improvements proposed for Lavender Hill, Clapham Junction as part of the Green Areas study.



An excellent example of improved interchange at Kidbrooke Station which the SELTRANS project hopes to follow.



Green Areas

In November 1995, the London Boroughs of Ealing, Hounslow, and Hammersmith & Fulham together with LT Buses, commissioned a study to assess options for extending bus priorities beyond the LBP. The conclusions of the Green Areas study were that the following principles are needed to achieve greater use of sustainable modes:

- > Total journey quality
- > Transport as part of the nature of the place
- > Mutually supportive, multi-modal approach
- > Sustainability and local transport
- > Reducing transport intensity
- > Rebalancing the network
- > Partnership, participation and leadership

Individual schemes in the

participating boroughs of Hounslow, Hammersmith & Fulham, Ealing and Wandsworth have now been designed. Home interviews took place in February 1998 to assess public reaction to the individual scheme proposals. The schemes are designed to benefit sustainable transport on an area basis rather than just a bus route basis.

However, funding for implementation has not yet been agreed. The possibility of utilising LBP monies for some of the Green Areas interchange schemes is under consideration. Additionally a TPP submission has been submitted to GOL this year which seeks package bid finance. The bid will seek funding for individual schemes as elements of the overall aim of traffic reduction in the areas concerned.

SELTRANS

The South East London TRANsport Strategy (SELTRANS) has been established with the aim of achieving an integrated transport policy across south east London.

The Leaders of the London Boroughs of Bexley, Bromley, Croydon, Greenwich, Lambeth, Lewisham and Southwark have already agreed common transport objectives. The inauguration of this group is particularly appropriate at this time as there are many ongoing cross-border projects which will have a major impact on transport in the area.

Among these are the Greenwich Millennium site, Croydon Tramlink, Docklands Light Railway extension to Lewisham, and the Jubilee line extension as well as several major regeneration programmes. The area will also be significantly

affected by decisions on other east London river crossings.

SELTRANS has set up two working groups, one to deal with rail issues and the other dealing with bus and traffic management issues. Overall the main objective is to review the opportunities for making better use of south east London's road and rail networks. The buses and traffic management themes are divided into the following areas: transportation integration, non-LBP roads, gaps in bus networks, Quality Bus issues and accessibility issues. A new Transport Policies and Programmes package bid was submitted in July.

Project overview continued

CAPTURE (CARs to Public Transport in the URban Environment)

A three-year European Union (Directorate General VII) project involving the seven countries of UK, Italy, Greece, Finland, Romania, Spain and Denmark.

The project was set up to evaluate and compare the implementation of eleven demonstrations of physical measures designed to achieve a modal shift from cars to public transport. These demonstrations are varied, ranging from extensive bus lanes with signal priority along a corridor in Copenhagen to a UTC system with public transport priority and information provision in Brescia, Italy.

LT Buses' contribution is to review the Camden Town to Camberwell Corridor, which at the start of the project was expected to have extensive bus priority implemented along it. In reality little bus priority along this corridor has taken place to date and results have been limited, except in Camden Town where a series of parking and pedestrian-related issues have been tackled.

LT Buses has provided additional input into the project, conducting a review of the measures that have not been implemented, which includes an understanding of why this has not occurred (for example local resistance to measures). This has proved invaluable to the project in identifying the issues which mirror similar concerns in several of the other towns and cities involved.

Environmental improvements have benefited buses, loading now takes place on a widened, shared footway.



Bus lane in Fagg's Road, one of the measures being implemented as part of SWELTRAC.



SWELTRAC - Partnership in Practice

The South and WEst London TRAnsport Conference (SWELTRAC) consists of an active partnership of eleven local authorities, London Transport, Railtrack, rail and bus operators.

The steering group also includes representatives of passengers (LRPC), business interests (London First) and transport pressure groups (Transport 2000).

The majority of the schemes originally identified have now been, or are being, implemented and, during the last year, progress has been made in the following areas:

- > Construction is under way on the new Feltham interchange including a new bus stopping area. This will open up the opportunity for fast, convenient public transport

journeys to and from Heathrow from all over the rail network in southern England

- > Bus SCOOT, giving priority for buses at traffic signals is now operational in Twickenham town centre and nearing completion in Kingston and Wimbledon

- > Development of signalled bus priority in Sutton is taking place.

A second study, completed in 1997, examined two routes:

- > A north-south corridor from Sutton to Willesden via Wimbledon, Putney, and Hammersmith

- > An east-west route from Croydon to New Malden via Sutton.

A large number of individual measures were identified on both of these routes and some are likely to proceed this financial year. One of the most interesting proposals is to 'meter' traffic into Raynes Park to eliminate congestion in the town centre and so greatly improve the environment. Traffic would be queued on the approaches with buses able to bypass the queues. Similar ideas have been put forward for a number of other

locations along these routes including Putney High Street and Wimbledon Village and are being evaluated at present.

A further initiative has been to look at ways to improve interchange at stations in the SWELTRAC area and this year funding is available to implement a number of measures. Initial ideas have been put forward, particularly looking at easing conditions for people moving on foot between different modes. A study is under way to prepare detailed proposals at more than a dozen stations.

Ideas for the future

Transport in London has reached a turning point. Following acceptance that new highway construction has little place in the solutions to today's urban traffic problems, there have been an increasing number of studies and papers arguing that traffic restraint and measures aimed at reducing the demand for car use are the only credible ways forward.

New Government Policies and Guidance - the Government's White Paper on the Future of Transport, Traffic Management & Parking Guidance in London and the Road Traffic Reduction Act - are all pointing in the same direction and, with the advent of the GLA, a new organisation - Transport for London - will be created to bring together strategic transport planning for London.

Putting these policies into practice will not be easy. Any measures that involve restrictions on personal choice and increased costs are never likely to be popular. Yet, if we are to deliver the transport system London needs and deserves, all

agencies involved must commit themselves wholeheartedly to its achievement. While new heavy rail or light rapid transit projects may be able to make a contribution to the overall picture, the lead times for such projects is long and capital financing uncertain. In the short term, we must rely on the bus to provide the improvement in travel quality that will be needed to persuade motorists to leave their cars at home. However, the bus can only deliver improvements if released from the claws of traffic congestion.

By developing Quality Commitments with London boroughs and embarking on Total Route Upgrade Projects,

LT Buses is taking the lead. If the Highway Authorities can dedicate more road space for the bus and upgrade the stop environment, LT Buses with the bus operators will be able to take maximum advantage of investment in the new low-emission, low-floor buses which are appearing on London's streets in increasing numbers.

Working together will provide the opportunity to achieve dramatic improvements in the reliability and quality of bus services in London.

If you would like further information on any of the projects included in this Review or on bus priority in general, please contact:

The Bus Priority and Traffic Unit
London Transport Buses
172 Buckingham Palace Road
London SW1W 9TN
Tel: 0171 918 3717
Fax: 0171 918 4449

